

User Guide

hp StorageWorks 700ux/1100ux Optical Jukebox

First Edition (September 2004)

Part Number: AA962-90901

This guide describes procedures for operating and troubleshooting the HP StorageWorks 700ux/1100ux Optical Jukebox.



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First Edition (September 2004)

Part Number: AA962-90901

Regulatory Model Number: LVLDC-0451

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About This Guide

This user guide provides information to help you:

- Operate the jukebox
- Troubleshoot the jukebox

“About This Guide” topics include:

- [Related documentation](#), page 8
- [Conventions](#), page 8
- [Getting help](#), page 10

Related documentation

In addition to this document, HP provides related information:

- *HP StorageWorks Optical 700ux/1100ux Jukebox Setup Guide*
- *HP StorageWorks Optical 700ux/1100ux Jukebox Getting Started Poster*

Conventions

Conventions consist of the following:

- [Document conventions](#)
- [Text symbols](#)

Document conventions

This document follows the conventions in [Table 1](#).

Table 1: Document conventions

Element	Convention
Cross-reference links	Blue text: Figure 1
Key and field names, menu items, buttons, and dialogue box titles	Bold
File names, application names, and text emphasis	<i>Italics</i>
User input, commands and directory names, and system responses (output and messages)	Monospace font COMMAND NAMES are uppercase monospace font unless they are case sensitive
Variables	<monospace, italic font>
Web site addresses	Blue underlined sans serif font text (http://www.hp.com)

Text symbols

The following symbols may be found in the text of this guide. They have the following meanings:



WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or death.



AVERTISSEMENT : le non-respect de ces instructions expose l'utilisateur à des risques potentiellement très graves.



AVVERTENZA: La mancata osservanza delle indicazioni fornite in un messaggio così evidenziato, può provocare lesioni personali o mettere in pericolo la vita dell'utente.



VORSICHT: In dieser Form hervorgehobener Text weist darauf hin, dass die Nichtbeachtung der Anleitungen zu Verletzungen oder zum Tod führen kann.



ADVERTENCIA: el texto con esta marca indica que si no se siguen las instrucciones, pueden producirse lesiones corporales o incluso la muerte.



警告: その指示に従わないと、人体への傷害や生命の危険を引き起こす恐れがある警告事項を表します。



警告: 以这种方式显示的文本表示: 如果不按警告中的指导信息操作, 可能会导致人身伤亡。



Caution: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

Note: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Getting help

If you still have a question after reading this document, contact an HP authorized service provider or access our web site: <http://www.hp.com>.

HP technical support

Telephone numbers for worldwide technical support are listed on the following HP web site: <http://www.hp.com/support/>.

Note: For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration or contract number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions
- HP StorageWorks Library and Tape Tools (L&TT) Support Ticket (if applicable)

HP storage web site

The HP web site has the latest information on this product. Access storage at: <http://www.hp.com/country/us/eng/prodserv/storage.html>. From this web site, select the appropriate product or solution. You can also visit <http://www.hp.com/go/udo>.

HP authorized reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-282-6672
- In Canada, call 1-800-863-6594
- Elsewhere, see the HP web site for locations and telephone numbers: <http://www.hp.com>.

Operations



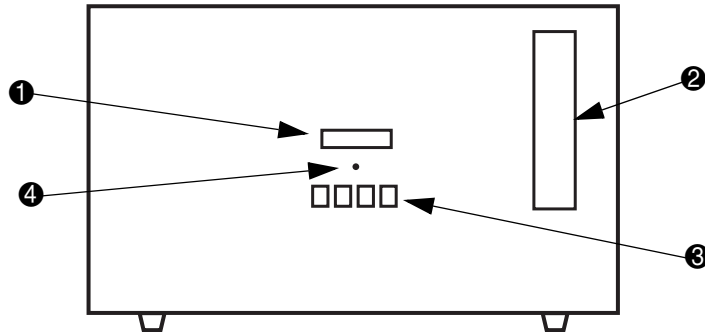
This chapter describes the following:

- [Identifying panel features](#), page 14
- [Using Ultra Density Optical \(UDO\) disks](#), page 18
- [Using application software](#), page 24

Identifying panel features

Identify the following panel features before you install the jukebox (see [Figure 1](#) and [Figure 2](#) on page 15).

Front panel features and descriptions

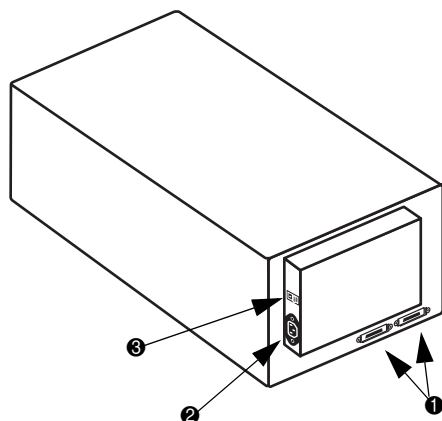


- | | |
|------------|---------------------------|
| ❶ Display | ❸ Menu navigation buttons |
| ❷ Mailslot | ❹ Activity Indicator |

Figure 1: Front panel features

- Display—Communicates control panel and status information.
- Mailslot—Used to insert and remove disks from the jukebox.
- Menu navigation buttons—Used to access jukebox menus.
- Activity indicator—Lit to indicate power and drive status, as well as the occurrence of faults.

Back panel features and descriptions



- ❶ SCSI ports
- ❷ Power receptacle
- ❸ Power switch
- ❹ Power switch

Figure 2: Back panel features

- SCSI ports—68-pin high-density SCSI connectors (Micro D-type); used for attaching the SCSI cable from the jukebox to the host computer. One port must have a SCSI cable connected, and the other must have a SCSI terminator connected to it.
- Power switch—Turns power to the jukebox on and off.
- Power receptacle—Used for connecting the power cord to the jukebox; located on the bottom of the power distribution assembly.



WARNING: This product can only be used with an HP approved power cord for your specific geographic region. Use of a non-HP approved power cord may result in: 1) noncompliance with individual, country-specific safety requirements; 2) insufficient conductor ampacity that could result in overheating with potential personal injury and/or property damage; and 3) a fractured power cord, which could cause the internal contacts to be exposed, which potentially could subject the user to a shock hazard. HP disclaims all liability when HP approved power cords are not used.



AVERTISSEMENT : ce produit ne peut être utilisé qu'avec un cordon d'alimentation approuvé par HP pour votre zone géographique. L'utilisation d'un cordon d'alimentation non approuvé par HP vous expose à ce qui suit : 1) non-conformité aux spécifications de sécurité du pays concerné ; 2) intensité admissible du conducteur insuffisante pouvant provoquer une surchauffe créant un risque de blessure ou d'endommagement du produit ; et 3) rupture de cordon pouvant exposer les contacts internes et créer un risque d'électrocution pour l'utilisateur. HP décline toute responsabilité en cas d'utilisation d'un cordon d'alimentation non approuvé.



AVVERTENZA: È possibile utilizzare questo prodotto solo con un cavo di alimentazione approvato da HP specifico per il paese di utilizzo. L'utilizzo di cavi di alimentazione non approvati da HP può produrre: 1) non conformità ai requisiti di sicurezza specifici del paese di utilizzo; 2) amperaggio del conduttore insufficiente con conseguente surriscaldamento e potenziale rischio di lesioni a persone e/o cose; 3) rottura del cavo di alimentazione con conseguente esposizione dei contatti interni e potenziale rischio di scosse elettriche per l'utente. HP declina qualsiasi responsabilità in caso di utilizzo di cavi di alimentazione non approvati da HP.



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ADVERTENCIA: este producto sólo puede utilizarse con un cable de alimentación aprobado por HP para su región geográfica específica. El uso de un cable de alimentación no aprobado por HP puede provocar lo siguiente: 1) el incumplimiento de requisitos de seguridad individuales y específicos del país; 2) insuficiente corriente permanente admisible de conductor que puede provocar un sobrecalentamiento y posibles lesiones personales o daños a la propiedad; y 3) un cable de alimentación puede romperse y exponer los contactos internos, lo que supone un peligro potencial de descarga eléctrica para el usuario. HP renuncia a toda responsabilidad en caso de utilizarse cables de alimentación no aprobados por HP.



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Using Ultra Density Optical (UDO) disks

UDO media is an integral part of the storage process. This section describes the following:

- [Choosing a disk type](#), page 18
- [Labeling a disk cartridge](#), page 19
- [Write-protecting a UDO disk](#), page 20
- [Loading a disk into the drive](#), page 21
- [Maintaining UDO media](#), page 22

Note: For UDO media specifications, see “[Media specifications](#)” on page 59.

Choosing a disk type

Two disk types can be used in the jukebox.

Table 2: UDO disk types

Disk Type	Description	HP Part Number
Rewritable	Designed for applications requiring data to be overwritten. The sectors may be written to, erased, and written to again many times.	Q2031A
Write Once Ready Many (WORM)	Designed to meet HIPAA and international archival regulations, allowing for permanent storage of data that cannot be altered or erased.	Q2030A

To order HP UDO media, contact your local HP Authorized Reseller or buy online from <http://www.hp.com/go/storagemedia>.

Labeling a disk cartridge

Make it a practice to label your UDO disk cartridges. Adhesive labels come with each UDO disk for this purpose (see [Figure 3](#)).



Caution: In order to avoid damaging the drive and media:

- Only apply labels to the areas designated in [Figure 3](#). Never place labels over the disk cartridge shutter or open the shutter for any reason.
- Ensure that the media is free of moisture and that all label corners are securely fastened to the media shell.
- Do not use disks with loosely attached labels.
- Do not use disks with multiple labels applied. Always remove old labels before applying new ones.

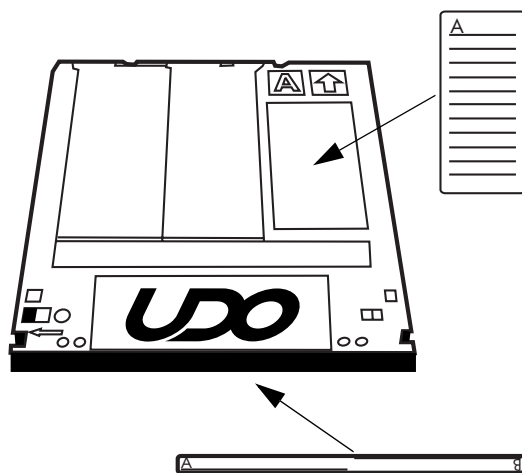


Figure 3: Labeling a UDO disk

Write-protecting a UDO disk

Each side of a UDO disk can be write-protected.

- With *rewritable disks*, this prevents existing files from being altered or erased, and new files from being written to the disk.
- With *WORM disks*, existing files cannot be altered or erased regardless of whether or not the disks have been write-protected. However, write-protecting a WORM disk prevents additional files from being written to the disk.

To write-protect a UDO disk, slide the red write-protect switch to the left, as indicated by the arrow on the cartridge (see [Figure 4](#)).

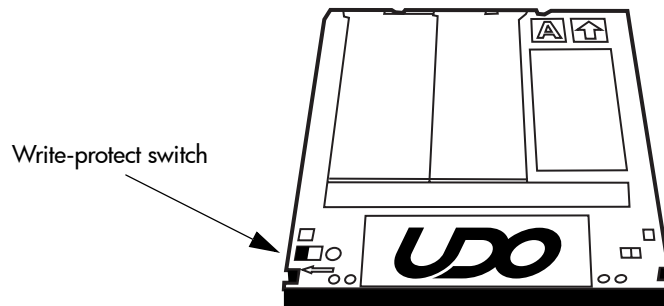


Figure 4: Write-protecting a UDO disk

Loading a disk into the drive

Note: Label all disks before loading them into the jukebox. Some application software packages require that you load and eject disks by using instructions in the software. If you use a software application to manage files in the jukebox, check the software documentation before proceeding with these steps.

1. Start with **READY**, or **LOAD *** displayed on the control panel.
2. Load UDO media into the drive by inserting the disk gently but firmly into the mailslot, shutter end first, and with the side you want to access facing to the right of the jukebox (A or B). See [Figure 5](#).

An incorrectly inserted disk will be rejected with **CART IN WRONG** displaying briefly.

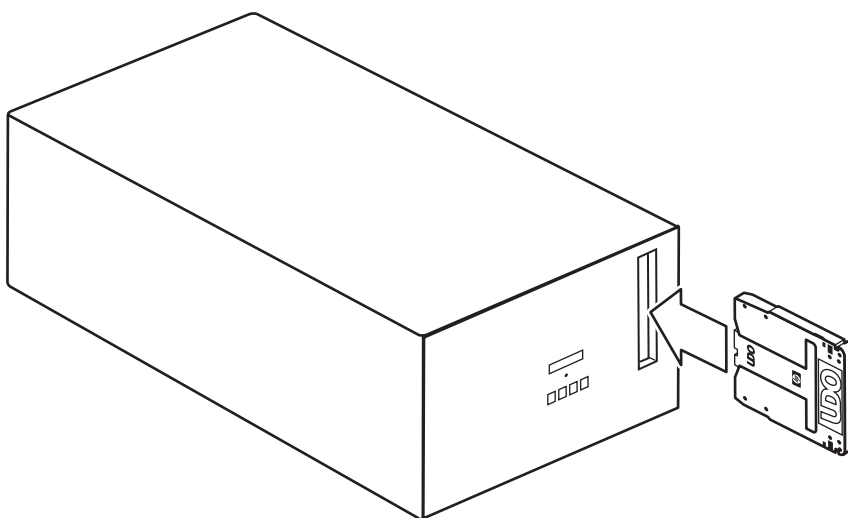


Figure 5: Loading media

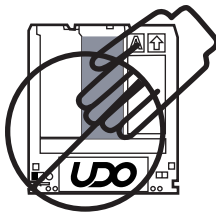
3. **LOAD SLOT #** will display, with # flashing to indicate the number of the first available storage slot in the jukebox. To select this storage slot number, press **LOAD** or **ENTER**. To choose a different storage slot, press **NEXT** or **PREV** until the desired slot number is displayed, and then press **ENTER**.

4. **LOADING** is displayed as the jukebox moves the disk to a slot. After the disk is loaded into the storage slot, **LOAD *** is displayed. You can now load additional disks by inserting them into the mailslot and repeating [step 3](#) until you are finished loading disks.
5. Press **CANCEL** to return to the **READY** state.

Maintaining UDO media

Follow these guidelines to ensure that your UDO disks remain in good condition.

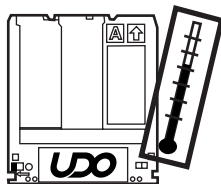
- Do not open the disk shutter and touch the disk surface.



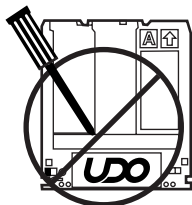
- Do not store the disk in a dusty location.



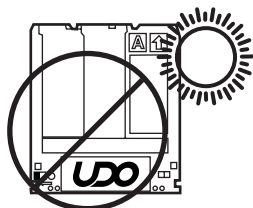
- Do not store the disk in temperatures outside of 5°C to 55°C (41°F to 122°F).



- Do not disassemble the disk.



- Do not expose the disk to direct sunlight.



- Do not drop the disk.



Using application software

Note: While HP-UX does provide native file system support for UDO media, this support is only for rewritable UDO media. Refer to the “Configuration” chapter in the *HP StorageWorks 700ux/1100ux Jukebox Setup Guide* that shipped with this product for more information.

The HP StorageWorks 700ux/1100ux Jukebox supports a variety of off-the-shelf software packages to manage your storage operations. For the latest information on which application software packages are compatible with this product, visit <http://www.hp.com/go/udo>.

Navigation

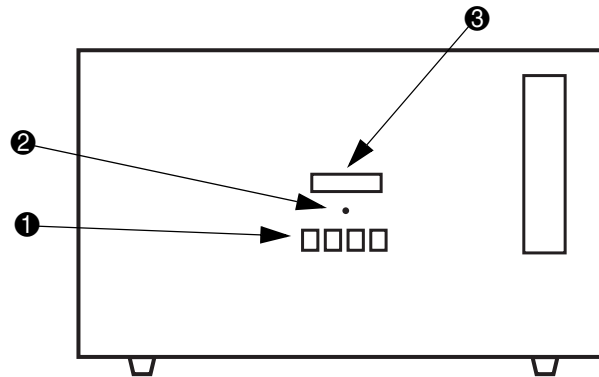
2

This chapter describes the following:

- [Control panel features and descriptions](#), page 26
- [Jukebox menu tree](#), page 28
- [Control panel operations](#), page 31

Control panel features and descriptions

The control panel enables manual control of all jukebox operations using four buttons and an LED display. The SCSI IDs of the jukebox and its optical drives can be set and changed, disks may be loaded and ejected, configurations can be monitored and changed, performance information can be viewed, internal tests can be run, and the jukebox can be secured from unauthorized use. See [Figure 6](#)



- ❶ Selection buttons
- ❷ Activity light
- ❸ 16-character display

Figure 6: Control panel features

- Activity light—Lights up differently to indicate status:
 - Steady green—Power is on.
 - Flashing green—A drive is being accessed.
 - Amber—A fault occurred.
- 16-character display—Shows information about the current operation.
- Selection buttons—Press to perform the operations:

- **CANCEL**—Cancels the current operation or menu selection.
- **PREV**—Scrolls the display choice backwards by one.
- **NEXT**—Scrolls the display choice forward by one.
- **ENTER**—Selects the displayed choice.

Using selection buttons

Use **CANCEL**, **PREV**, **NEXT**, and **ENTER** to select tasks you want the jukebox to perform. Each time you push the **NEXT** or **PREV** button, a task choice is displayed. An asterisk (*) indicates there is a menu beneath that choice, which you can access by pressing the **ENTER** button.

Tip: To scroll through the menu options more quickly, push and hold the **NEXT** or **PREV** button.

You can return to **READY** at any time by pressing **CANCEL**. In some cases, you may need to press **CANCEL** more than once.

Top-level menus

The jukebox has four top-level menus:

READY	Indicates that jukebox is ready for operation.
ADMIN *	Provides access to second-level menu choices. A password is needed to access these choices.

Note: A default password of “000 000 000” is set at the factory.

LOAD *	Used to load disks into the jukebox mailslot.
EJECT *	Used to eject disks from the jukebox mailslot.

Note: An “*” indicates that there are multiple choices available for the displayed menu item. When an item is flashing, press **ENTER** to select it, or **PREV** or **NEXT** to display additional choices.

Second-level menus

The jukebox has four second-level menus:

TEST *	Runs internal tests.
<hr/>	
Note: Internal tests should primarily be run by service personnel. Only run a test when your service representative requests that you do.	
<hr/>	
INFO *	Retrieves performance information stored in the jukebox logs.
CONFIG *	Customizes the way the jukebox functions.
SCSI IDs *	Displays SCSI IDs and allows you to change them.

Note: An asterisk (*) indicates that there are multiple choices available for the displayed menu item. When an item is flashing, press **ENTER** to select it, or **PREV** or **NEXT** to display additional choices.

Control panel operations

The following operations can be performed from the jukebox control panel:

- [Ejecting a disk](#), page 31
- [Entering the administration menu password](#), page 32
- [Changing the administration menu password](#), page 33
- [Viewing the current SCSI IDs](#), page 33
- [Changing the current SCSI IDs](#), page 35
- [Configuring the jukebox](#), page 36
- [Retrieving log history](#), page 37
- [Running an internal test](#), page 40

Ejecting a disk

READY > EJECT *

Note: Some application software packages require that you load and eject disks by following the instructions in the software. If you use application software to manage files in the jukebox, check the software documentation before proceeding with these steps.

1. With READY displaying on the control panel, press **NEXT** until EJECT * is displayed, and then press **ENTER**.
2. EJECT SLOT # is displayed, with the “#” flashing to indicate the first storage slot in the jukebox that contains a disk.
 - To select the storage slot number currently displayed, press **ENTER**.
 - To choose a different storage slot, press **NEXT** or **PREV** until the desired slot number is displayed, and then press **ENTER**.

EJECTING is displayed as the jukebox moves the disk to the mailslot. When the disk is in the mailslot, the display returns to EJECT SLOT #.

3. Remove the disk from the mailslot.

You can now eject additional disks by pressing **ENTER** and then following [step 1](#) through [step 3](#).

Note: When the last disk is ejected, `EMPTY` is displayed briefly before returning to `EJECT *`.

4. Press **CANCEL** to return to the `READY` state.

Entering the administration menu password

`READY > ADMIN* > PSWD 000 000 000`

A nine digit numeric password is required to access menu choices beneath the `ADMIN*` menu of the jukebox. The jukebox ships with a factory default password setting of `000 000 000`.

Note: To change the administration menu password, see [“Changing the administration menu password”](#) on page 33.

To access administration menu options using the factory default password:

1. With `READY` displaying on the control panel, press **NEXT** until `ADMIN*` is displayed.
2. Press **ENTER**. `PSWD 000 000 000` is displayed and the first set of three zeros flashes.
 - If the default password `000 000 000` is still in effect, you can accept this password by pressing **ENTER** three times (once for each set of three zeros). `TEST*` is displayed, indicating that the password was accepted. You are now in the menu tree below `ADMIN*`.
 - If you have already changed the password from the factory setting, then continue with the following steps.
3. Press **NEXT** or **PREV** until the first number of your password is displayed and then press **ENTER**. The middle set of three zeros flashes.
4. Press **NEXT** or **PREV** until the second number of your password is displayed and then press **ENTER**. The third set of three zeros flashes.
5. Press **NEXT** or **PREV** until the third number of your password is displayed and then press **ENTER**. `TEST *` is displayed, indicating that the password was accepted. You are now in the menu tree below `ADMIN*`.

Changing the administration menu password

READY > ADMIN* > PSWD 000 000 000 >CONFIG*

To protect the system from unauthorized access, change the password from the factory default setting:

1. With READY displaying on the control panel, press **NEXT** until ADMIN* is displayed, then press **ENTER** and enter the password.
2. TEST * is displayed, indicating that the password was accepted. Press **NEXT** until CONFIG * is displayed and then press **ENTER**.
3. Press **NEXT** or **PREV** or until NEW PASSWORD is displayed and then press **ENTER**.
4. NEW 000 000 000 is displayed and the first set of three zeros flashes. Press **NEXT** or **PREV** until the new number you want to assign to the first part of the password is displayed and then press **ENTER**. The second set of three zeros flashes.
5. Press **NEXT** or **PREV** until the new number you want to assign to the second part of the password is displayed and then press **ENTER**. The third set of three zeros flashes.
6. Press **NEXT** or **PREV** until the new number you want to assign to the third part of the password is displayed and then press **ENTER**.
7. PASSWORD CHANGED is displayed. Press **CANCEL** three times to return to READY.
8. Power off the jukebox, then power it back on to save the password to the jukebox flash ROM.

Note: Be sure to document your new password. If you forget it, contact your service representative to reset the security code to the factory default.

Viewing the current SCSI IDs

READY > ADMIN* > SCSI IDS > VIEW IDS >

To view current SCSI IDs:

1. With READY displaying on the control panel, press **NEXT** until ADMIN* is displayed and then press **ENTER**.

2. Enter the administration password (see “[Entering the administration menu password](#)” on page 32).
3. Press **NEXT** until SCSI IDS is displayed and then press **ENTER**.
4. JKBX ID yy or DRIVE xx ID yy is displayed. Press **NEXT** or **PREV** to scroll through the current SCSI IDs.
5. Press **CANCEL** to exit.

Default SCSI IDs

Default SCSI IDs are:

- Jukebox = 6
- Drive 1 = 5
- Drive 2 = 4

Changing the current SCSI IDs

READY > ADMIN* > SCSI IDS >

To change the SCSI IDs:

1. Follow the instruction in “[Viewing the current SCSI IDs](#)” on page 33 until the list of SCSI IDs is displayed.
2. Press **NEXT** until the setting you want to change is displayed, and then press **ENTER**. The ID begins flashing.
3. Press **NEXT** or **PREV** until the new ID that you want is displayed and then press **ENTER**.
4. Repeat [step 2](#) and [step 3](#) until you have changed all the IDs that need to be updated.
5. Press **NEXT** until UPDATE is displayed, and then press **ENTER**.
6. UPDATE or WAIT FOR UPDATE and then IDS SAVED is displayed briefly.
 - If the new settings do not conflict with other SCSI IDs on the bus, SCSI IDS is displayed.
 - If the new settings conflict with other IDs on the SCSI bus, CONFLICT-ABORTED is displayed briefly and then VIEW IDS is displayed. Any changes entered are lost, and you must repeat the above steps to set a new ID.
7. Press **CANCEL** until READY is displayed.
8. Power off the jukebox and then power it back on to save the IDs to the jukebox flash ROM.

Configuring the jukebox

You can set configurations to customize the way the jukebox operates. [Table 3](#) lists the jukebox configuration options.

Table 3: Configuration options

RECOVERY ON/OFF	Toggles between ON and OFF. If the configuration is set to ON, the jukebox attempts to recover from errors; if the configuration is set to OFF, the jukebox immediately stops moving if an error condition occurs. The default configuration is RECOVERY ON, and recovery should remain ON under normal conditions.	RECOVERY ON
RESTORE DEFAULTS	Sets all jukebox configurations to default settings.	NA
CLEAR ODOMETERS	Sets all jukebox odometers to zero. Note: Used by service personnel only.	NA
NEW PASSWORD	Allows you to change the numerical password required to access the menu choices under the ADMIN* menu on the jukebox control panel.	000-000-000
SECURE ON/OFF	Toggles between ON and OFF. The ON configuration <i>disables</i> loading and ejecting disks. The OFF configuration <i>enables</i> loading and ejecting disks.	SECURE OFF
SECURE MAIL OUT/IN	Toggles between OUT and IN. Determines the orientation of the mailslot when the SECURE configuration is set to IN. When set to OUT, the mailslot remains in its normal orientation. When set to IN, the mailslot rotates in, making it inaccessible.	OUT
POWER SECURE ON/OFF	Toggles between ON and OFF. The ON configuration retains your selection of the SECURE MS configuration through power cycling (or power outage). The OFF configuration allows the jukebox to return to the default setting of this configuration after a power cycling.	POWER SECURE OFF
REP RECOVERED ON/OFF	Toggles between ON and OFF. When set to ON, recovered errors are reported; when set to OFF, recovered errors are not reported.	REP RECOVERED ON
CLEAR SOFT LOG	Erases soft log history.	NA
CLEAR HARD LOG	Erases hard log history.	NA

READY > ADMIN* > CONFIG*

To set an operating configuration:

1. With READY displaying on the control panel, press **NEXT** until ADMIN* is displayed.
2. Enter the administration password (see “[Entering the administration menu password](#)” on page 32).
3. TEST* is displayed. Press **NEXT** until CONFIG* is displayed and then press **ENTER**.
4. Press **NEXT** or **PREV** until the name of the configuration you want to set is displayed and then press **ENTER**.

If the configuration has multiple settings, the current setting flashes. Proceed to [step 5](#). Otherwise, the configuration is set and a confirmation message is displayed.

5. If the current configuration setting is flashing, press **NEXT** or **PREV** until the desired setting is displayed, and then press **ENTER**. OPTION SAVED is displayed and then the configuration’s name and setting is displayed, indicating that the configuration is set.
6. Press **CANCEL** to return to READY.
7. Power off the jukebox and then power it back on to save the configuration to the jukebox flash ROM.

Retrieving log history

READY > ADMIN* > INFO*

To display information stored in the jukebox operating logs:

1. With READY displaying on the control panel, press **NEXT** until ADMIN* is displayed.
2. Enter the administration password (see “[Entering the administration menu password](#)” on page 32).
3. TEST* is displayed. Press **NEXT** until INFO* is displayed, and then press **ENTER**.
4. Press **NEXT** until the name of the log you want to access is displayed and then press **ENTER**.

- After you are finished viewing log information, press **CANCEL** to return to READY.

Information logs are described in [Table 4](#).

Table 4: Information logs

HARD ERROR*	Log of unrecoverable errors (commands that did not successfully complete). Returns either NO HARD ENTRIES or ENTRY #. (There may be multiple hard error numbers.) Press ENTER to view the log for the currently displayed error, or press NEXT to select the next error.
SOFT ERROR*	Log of recovered errors (commands that completed, but required retries). Returns either NO SOFT ENTRIES or ENTRY #. (There may be multiple soft error numbers.) Press ENTER to view the log for the currently displayed error, or press NEXT to select the next error.
RECOVERY ERROR*	Log of errors during the most recent move. Returns either NO ENTRIES or the number of recovery errors. Press ENTER to view the log for the currently displayed error, or press NEXT to select the next error.
■ *HARDWARE ERR #	Internal diagnostics error number for the failure.
— MOTION <name>	<name> indicates one of the following types of movements taking place in the jukebox at the time of the failure: <ul style="list-style-type: none"> ■ EXCHANGE ■ MOVE ■ POSITION ■ INIT ELEM ■ REZERO ■ ROTATE ■ DIAGNOSTIC ■ RESTORE

Table 4: Information logs (Continued)

— SOURCE #	SCSI element number to which the source refers. (This information is valid for MOVE, EXCHANGE, and POSITION movements only.)
— DESTINATION 1 #	SCSI element to which the first destination refers. (This information is valid for MOVE and EXCHANGE movements only.)
— DESTINATION 2 #	SCSI element to which the second destination refers. (This information is valid for the EXCHANGE movement only.)
— ODOMETER #	Move number in which the error occurred.
— *MICROMOVE 1 #	First jukebox micro-move for the original move command issued prior to the failure.
— *MICROMOVE 2 #	Second jukebox micro-move for the original move command issued prior to the failure.
— *MICROMOVE 3 #	Third jukebox micro-move for the original move command issued prior to the failure.
— *MICROMOVE 4 #	Fourth jukebox micro-move for the original move command issued prior to the failure.
— *MICROMOVE 5 #	Fifth jukebox micro-move for the original move command issued prior to the failure.
— *MICROMOVE 6 #	Sixth jukebox micro-move for the original move command issued prior to the failure. (This is the last to be logged.)
■ *MICROMOVE ER #	Micro-move error that occurred.

Running an internal test

READY > ADMIN* >TEST*

This section describes self-diagnostic tests that are available on the jukebox.



Caution: Diagnostic tests should be run only by an authorized service representative. Descriptions of the self-diagnostic tests are included in this manual *for information purposes only*. If not properly completed, some of the internal diagnostic tests can corrupt your file system. In some rare instances, your service representative may request that you run specific tests to provide information before they come to your site, or you may receive a control panel message to run a specific test.

1. With READY displaying on the control panel, press **NEXT** until ADMIN* is displayed.
 2. Enter the administration password (see “[Entering the administration menu password](#)” on page 32).
 3. TEST* is displayed. Press **ENTER**.
 4. Press **NEXT** until the name of the test you want to run is displayed and then press **ENTER** to start the test.
-

Note: You may press **CANCEL** at any time to abort a test. A delay can occur while the current test loop completes.

Table 5: Internal tests

Test Name	Description
EXCHANGE DEMO	<i>Used by service personnel only. Do not run this test if the jukebox contains disks with file system data on them.</i> This test moves randomly-chosen optical disks to random storage slot locations. This test displays FAIL if there are no disks in the jukebox or if all storage slots are full. For best results, the jukebox should contain as many disks as there are drives, plus two additional disks. The transport and mailslot must be empty.
INIT MECHANICS	Runs the FIND PLUNGE HOME, FIND XLATE HOME, and INIT ELEM STATUS tests. Each test is run one time per test loop.
INIT ELEM STATUS	Physically scans the entire unit to determine which storage slots contain disks and if the drives contain disks. This test appears as ISTAT TEST in all control panel error messages.
MAGAZINE IO	Makes a combination of moves with a PASS/FAIL result. It moves an optical disk from a randomly-chosen full slot to a randomly-chosen empty slot with a random flip. It then moves the disk back to its original storage slot with its original orientation. This test displays FAIL if there are no disks in the jukebox or if all storage slots are full. The drives and mailslot must be empty.
MAILSLOT IO	Makes a combination of moves with a PASS/FAIL result. It moves an optical disk from the lowest-numbered full slot to the mailslot with a random flip. It then moves the cartridge back to its original slot with its original orientation. This test displays FAIL if there are no disks in the jukebox or if all storage slots are full. The drives and mailslot must be empty.
TRANSLATE TEST	Moves the disk transport mechanism from side to side. No disks are required.
FLIP TEST	Makes a combination of moves with a PASS/FAIL result. Flips the disk transport mechanism at various locations. No disks are required.
PICKER TEST	Tests the plunge motion of the picker.
FIND PLUNGE HOME	Calibrates the disk transport mechanism, establishes the mechanism's orientation, and determines the reference points in the picker travel path. Assumes that the mechanics and servo system are functional. No disks are required.
FIND XLATE HOME	Calibrates the reference points for the side-to-side motion of the disk transport mechanism. No disks are required.

Table 5: Internal tests (Continued)

Test Name	Description
EMPTY DRIVES	<i>Used by service personnel only. Do not run this test if the jukebox contains disks with file system data on them.</i> Moves disks out of the drive mechanism(s) and returns them to their home storage slot locations if the locations are known. If the home storage location is not known, the jukebox moves the disks into the first available empty storage slot.
EMPTY PICKER	Moves a disk from the disk transport mechanism to its home storage slot location if that location is known, otherwise the disk is placed into the first available empty storage slot.
FILL PICKER	<i>Used by service personnel only. Do not run this test if the jukebox contains disks with file system data on them.</i> Moves a disk into the disk transport mechanism from the first storage slot containing a disk.
EXERCISE MECH	Runs the TRANSLATE TEST, FLIP TEST, MAGAZINE IO, DRIVE IO, and MAILSLOT IO tests. Each test runs one time per test loop.
WELLNESS TEST	Checks the general capability of the jukebox. Requires one loaded disk. The drives, transport, and mailslot must be empty. Runs INIT MECHANICS and EXERCISE MECHANICS. Each test runs one time per test loop.
MAILSLOT SENSORS	Displays the current state of the mailslot sensors. If a sensor is not blocked, a "0" is displayed. If a sensor is blocked, an "*" is displayed. The display automatically updates when the status changes.
STARWARS	The display shows F:0 B:0. Each "0" indicates one of the paths that the disk transport mechanism follows in front of each stack of optical disks. If the path is clear, a "0" displays; if the path is blocked (because of an optical disk that is not inserted fully into its storage slot for example), an "*" is displayed. This display is automatically updated if the status changes.

Table 5: Internal tests (Continued)

Test Name	Description
FLIPPER SENSORS	Displays the state of the front and back flip sensors. "0" indicates the sensor is not blocked, and "*" indicates that it is blocked.
SWING SENSOR	Displays the state of the swing sensor. "0" indicates the sensor is not blocked, and "*" indicates that it is blocked.
SHIPPING PARK	Positions the picker so that the shipping screws can be inserted to secure the picker during shipping. Also rotates in the mailslot.

Troubleshooting

3

This chapter describes the following:

- [Troubleshooting common problems](#), page 46
- [Retrieving log history](#), page 52
- [Running an internal test](#), page 52
- [Using HP StorageWorks Library and Tape Tools](#), page 53

Troubleshooting common problems

If the procedures in [Table 6](#) do not address or resolve your problem, visit <http://www.hp.com/go/udo> for additional assistance, or contact HP technical support (see “[Getting help](#)” on page 10).

Table 6: Troubleshooting installation

Problem	Solution
Power Up and Detection	
Jukebox will not power on	<ul style="list-style-type: none"> ■ Check that the power indicator light on the control panel is on. If it is not, make sure the power switch on the back panel is on. ■ Replace the power cord.
Host computer system does not recognize the jukebox or the drives	<ul style="list-style-type: none"> ■ Ensure the jukebox is not in an error or failed state. If so, troubleshoot the error before continuing. ■ Ensure the jukebox is connected and powered on. The jukebox must be on and displaying READY when booting the host computer for the jukebox to be recognized. ■ Check that the SCSI bus has been terminated and that the maximum cable length has not been exceeded. ■ Check SCSI ID assignments and resolve any conflicts. ■ Ensure you are connected to the correct SCSI bus type. UDO jukeboxes are LVDS devices. ■ If using a narrow (8-bit) HBA, make sure that all addresses are in the range 0 through 7. ■ For Windows operating systems, use the device manager to rediscover the jukebox. ■ For HP-UX, use <code>ioscan</code> to verify that the HBA and attached devices are claimed. ■ For other operating systems, refer to the system administrators guide for diagnosing missing peripherals.

Table 6: Troubleshooting installation (Continued)

Problem	Solution
	<ul style="list-style-type: none"> ■ Check that the application software is compatible with the jukebox. ■ Check that the device is present on the system using HP StorageWorks Library & Tape Tools, available from http://www.hp.com/support/tape_tools. ■ Power cycle the jukebox and power down the host. Wait until the jukebox completes its power cycle before powering up the host.
The power-on selftest failed and <code>DEVICE FAILED</code> is displayed	<ul style="list-style-type: none"> ■ Ensure the two shipping screws on the left side of the jukebox have been removed. ■ Power cycle the jukebox. ■ If the power-on test continues to fail, write down the displayed error code and a micro move error, and contact your support representative.
Power to the jukebox failed while a disk was in the drive and the display did not return to <code>READY</code> after the power came back on	<ul style="list-style-type: none"> ■ Power cycle the jukebox. ■ If <code>READY</code> does not display (power-on test is unsuccessful), write down any error messages, and contact your support representative. <hr/> <p>Caution: Do not move the unit! Moving the unit risks damaging the optical drive.</p> <hr/>

Table 6: Troubleshooting installation (Continued)

Problem	Solution
Other SCSI devices no longer work when the jukebox is installed	<ul style="list-style-type: none"> ■ Check SCSI ID assignments and resolve any conflicts. ■ Ensure that the SCSI ID for the HBA is different from that of the jukebox. ■ Check for proper SCSI cabling and termination. ■ Ensure the maximum cable length for the bus has not been exceeded (12 meters for LVDS and 3 meters for SE).
Media	
A disk is stuck in a drive	<ul style="list-style-type: none"> ■ See "Ejecting a disk" on page 31. ■ Attempt to unload the disk using your application software. ■ If unsuccessful, contact your service representative.
Cannot write to a disk	<ul style="list-style-type: none"> ■ Check the host file system access permissions. ■ Eject the disk and check that the write-protect tab on each side of the disk is in the write-enabled position (see "Write-protecting a UDO disk" on page 20). ■ If unsuccessful, contact your service representative.
Control Panel Messages	
No display messages appear	<ul style="list-style-type: none"> ■ Ensure that the power cord is connected. ■ Ensure that the power switch is on. ■ Power cycle the jukebox.

Table 6: Troubleshooting installation (Continued)

Problem	Solution
LOAD ERROR or FAILED is displayed when a disk is inserted into the mailslot	<ul style="list-style-type: none"> ■ Press CANCEL. Insert the disk into the mailslot again. ■ If the light bar on the control panel is amber, cycle power to the jukebox. When READY is displayed, try loading the disk again. ■ If unsuccessful, contact your service representative.
CART IN WRONG OR INCOMPATIBLE is displayed when a disk is loaded.	An attempt was made to load an incompatible disk into the jukebox, or an incompatible disk was placed backwards into the mailslot. Ensure that you use UDO disks in UDO drives.
MAILSLOT EMPTY is displayed when a disk is inserted into the mailslot	<ul style="list-style-type: none"> ■ Remove and then replace the disk fully into the mailslot. ■ If the same error reappears, then the mailslot sensors are not detecting a disk and may be defective. Contact your service representative.
DEST NOW FULL is displayed when a disk is inserted into the mailslot	<p>The jukebox moved a disk into the slot you chose before your load command executed.</p> <ul style="list-style-type: none"> ■ Press CANCEL, select another slot for the disk, and then reattempt a load. ■ Initiate an INIT ELEM STATUS test (see “Internal tests” on page 41).
TRANSPORT FULL is displayed when a disk is inserted into the mailslot	<ul style="list-style-type: none"> ■ The disk transport mechanism already contains a disk. Refer to your host and application software documentation for recovery procedures. ■ Attempt an EMPTY PICKER test (see “Internal tests” on page 41). ■ If unsuccessful, contact your support representative.

Table 6: Troubleshooting installation (Continued)

Problem	Solution
MAILSLOT SENSOR is displayed when a disk is inserted into the mailslot	<ul style="list-style-type: none"> ■ Remove and then replace the disk fully into the mailslot. ■ If unsuccessful, the jukebox mailslot sensors may have failed. Contact your service representative.
EJECT ERROR is displayed when a disk eject is attempted	<ul style="list-style-type: none"> ■ Press CANCEL. Attempt to eject the disk again. ■ If the LED on the control panel is amber, cycle power to the jukebox and try to eject the disk again when READY is displayed. ■ If there is no disk in the mailslot and this error message repeats, contact your service representative.
RESERVED is displayed when a disk load or eject is attempted	<p>The application software reserved the element or jukebox for its use or a security configuration was set to prevent disk ejection.</p> <ul style="list-style-type: none"> ■ See page 37. ■ Attempt the operation using your application software.
EMPTY is displayed when a disk eject is attempted	<p>This is not an error. There are no disks in the jukebox.</p>
TRANSPORT FULL is displayed when a disk eject is attempted	<ul style="list-style-type: none"> ■ The disk transport mechanism already contains a disk. Refer to your host and application software documentation for recovery procedures. ■ Attempt an EMPTY PICKER test (see “Internal tests” on page 41). ■ If unsuccessful, contact your service representative.

Table 6: Troubleshooting installation (Continued)

Problem	Solution
SOURCE NOW EMPTY is displayed when a disk eject is attempted	<p>The application software moved the disk from the slot you chose before your eject command executed.</p> <ul style="list-style-type: none"> ■ Press CANCEL. You may have to wait for the application software to replace the disk into the slot before attempting another eject. ■ Initiate an INIT ELEM STATUS test (see "Internal tests" on page 41).
MAILSLOT FULL is displayed when a disk eject is attempted	A disk is in the mailslot. To remove the disk, select EJECT *, select the slot you want the disk ejected from again, and eject the disk.
Administration	
Forgot the password	<ul style="list-style-type: none"> ■ Enter the default password (000 000 000). ■ If unsuccessful, contact your service representative.
You want to stop a test that is running	Press CANCEL . The current test loop continues until finished, then the test stops.

Retrieving log history

In addition to the procedures listed in the previous sections, the jukebox log history may assist in the troubleshooting process. See “[Retrieving log history](#)” on page 37 for more information on how to access the log using the jukebox control panel.

Running an internal test

If your service representative requests that you run an internal test, see “[Running an internal test](#)” on page 40 for more information on how to access the test options using the jukebox control panel.

Using HP StorageWorks Library and Tape Tools

HP StorageWorks Library and Tape Tools (L&TT) is a robust diagnostic tool for tape mechanisms, tape automation, magneto-optical and UDO products. L&TT provides functionality for firmware downloads, verification of device operation, maintenance procedures, failure analysis, corrective service actions and some utility functions. Seamless integration is provided with HP's hardware support organization through generating and emailing support tickets. The support ticket delivers a snapshot, or an in-depth view, of the storage system.

L&TT is a free download from the Web and deploys in fewer than five minutes. It is ideal for customers who want ensured product reliability, self-diagnostics and faster resolution of device issues.

For more information, visit <http://www.hp.com/support/tapetools>.

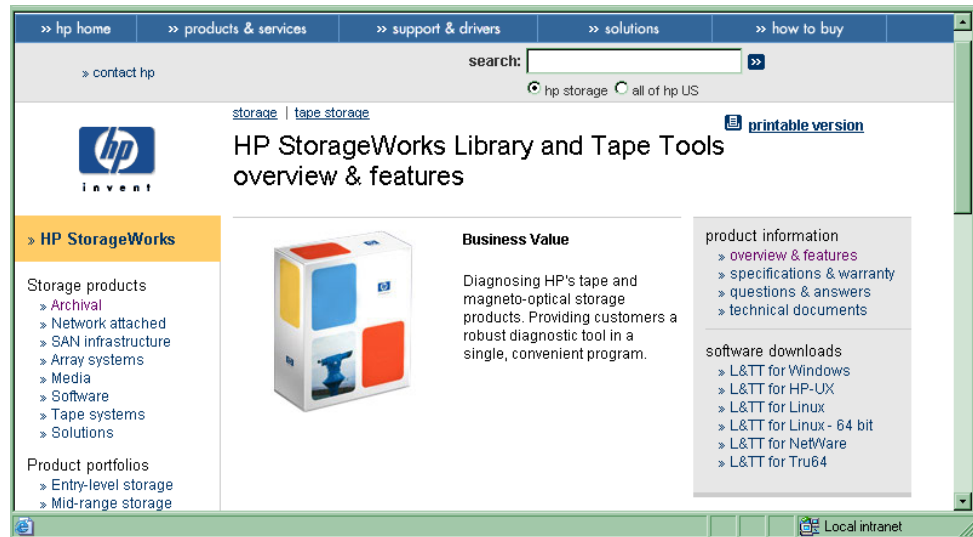


Figure 8: HP StorageWorks L&TT

Specifications



This appendix describes the following:

- [Environmental specifications](#), page 56
- [Jukebox specifications](#), page 57
- [Drive specifications](#), page 58
- [Media specifications](#), page 59
- [Safety and regulatory specifications](#), page 60

Environmental specifications

Table 7: Environmental specifications

Characteristic	Specification
Temperature	
Operating	10°C to 35°C (50°F to 95°F)
Non-operating (without media)	-40°C to 60°C (-40°F to 140°F)
Gradient	10°C (50°F) per hour
Transportation (<14 consecutive days)	-40°C to 60°C (-40°F to 140°F)
Humidity	
Operating	10% to 80% RH
Non-operating (without media)	5% to 90% RH
Shock	
Non-operating (without media)	10 cm tilt, drop test
Power Requirements	
Line voltage	100 to 240 VAC
Line frequency	50 to 60 Hz
Power consumption	70 W maximum

Jukebox specifications

Table 8: Jukebox specifications

Characteristic	Specification
General	
Average disk exchange time	2.8 seconds
MSBF (robotics)	1,000,000 swaps
Physical	
Height	74 cm (29 in)
Width	77 cm (30 in)
Depth	106 cm (42 in)
Weight (net)	30 kg (66 lbs)
Weight (shipping)	36 kg (80 lbs)
Interface	
SCSI interface	Low-voltage differential SCSI (LVDS), 68 pin
Certification	
Safety	IEC 60950: 1999, 3rd Edition
Emissions	FCC Class A, CISPR 22, Class A, CISPCR24
Laser	EN 60825-1, CDRH

Drive specifications

Table 9: Drive specifications

Characteristic	Specification
Disk capacity	30 GB
Average seek	35 msec
Rotational speed	<ul style="list-style-type: none"> ■ 2100 RPM +/- 0.5% WORM ■ 1950 RPM +/- 0.5% Rewritable
Data transfer rate (software and system dependent)	<ul style="list-style-type: none"> ■ Reads (max. sustained): <ul style="list-style-type: none"> — WORM, 7.96 MB/sec — Rewritable, 7.99 MB/sec ■ Writes (max. sustained): <ul style="list-style-type: none"> — WORM, 3.98 MB/sec — Rewritable, 3.99 MB/sec ■ Burst (synchronous): 40 MB/sec ■ Burst (asynchronous, data in): 6.7 MB/sec ■ Burst (asynchronous, data out): 40 MB/sec
Disk load time	5 sec typical
Disk unload time	3 sec typical
Read/write compatibility	Read/write UDO 1st generation format only
Interface type	SCSI LVD (68 pin)
MSBF	500,000 load/unload cycles
Read/write error rate (uncorrectable)	< 1 per 10 ²⁰ bytes read
Seek error rates	<ul style="list-style-type: none"> ■ Recoverable: < 1 per 100,000 seeks ■ Hard error seeks: <1 per 10,000 seeks

Media specifications

Table 10: Media specifications

Characteristic	WORM Specification	Rewritable Specification
General		
Recording capacity	30 GB	30 GB
Archival life (recorded)	50 years	50 years
Shelf life (unrecorded)	50 years	50 years
Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty
Physical		
Disk thickness	2.4mm (.1in)	2.4mm (.1in)
Outer diameter	130mm (5.12in)	130mm (5.12in)
Bytes per sector	8192 bytes	8192 bytes
Recording layer	Phase change	Phase change
Performance		
Load-unload lifetime	20,000 cycles per side	20,000 cycles per side
Overwrite capability	No	Yes
Operating Environment		
Operating humidity range	5°C to 55°C, 3% to 85% RH	5°C to 55°C, 3% to 85% RH
Non-operating (storage) humidity range	-10°C to 55°C, 3% to 90% RH	-10°C to 55°C, 3% to 90% RH

Safety and regulatory specifications

Table 11: Safety and regulatory specifications

Description	Specification
UL Listed Mark	UL 60950 (standard for safety of information technology equipment)
TUV GS Mark (Germany)	EN60950, IEC950 (standard for safety of information technology equipment, third edition)
CE Marking (European Union)	Low Voltage Directive, 73/23/EEC, European Union
CUL Mark (Canadian UL)	CAN/CSA 22.2 No. 950 (standard for safety of information technology equipment)
Regulatory Series ID Number	LVLDC-0451, Class A

Safety and Regulatory



This appendix describes the following safety and regulatory information for the United States, Finland, Sweden, Germany, United Kingdom, European Union, and Japan:

- [Federal Communications Commission Notice](#), page 62
- [Canadian Notice \(Avis Canadien\)](#), page 63
- [European Union Notice](#), page 64
- [EC radio frequency interference statement \(Europe only\)](#), page 64
- [EC radio frequency interference statement \(Europe only\)](#), page 64
- [English translation of Finland regulatory information](#), page 66
- [stock Turvallisuusyhteenveto](#), page 65
- [English translation of Finland regulatory information](#), page 66
- [BSMI Notice](#), page 69
- [Japanese Notice](#), page 69
- [Laser Device](#), page 70
- [CDRH Regulations \(USA only\)](#), page 70

Note: In addition to the safety information in this appendix, also refer to the *HP Safety Guide* that shipped with your product.

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (that is, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Declaration of Conformity for products marked with the FCC logo - United States only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this FCC declaration, contact:

Hewlett-Packard Company
Regulatory Engineer, MS E-200
825 14th Street S.W.
Loveland, CO 80537

Or, call:

(970) 898-1738

To identify this product, refer to the Part, Series, or Model number found on the product.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice



Products bearing the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community and if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22) - Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- EN 60950 (IEC 60950) - Product Safety

EC radio frequency interference statement (Europe only)



WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



AVERTISEMENT : matériel de classe A. L'utilisation de ce matériel en zone résidentielle est susceptible de générer des interférences nuisibles, auquel cas l'utilisateur sera tenu d'y remédier à ses propres frais.



AVVERTENZA: Questo è un prodotto di Classe A. In un ambiente residenziale, questo prodotto può causare interferenze radio. In tal caso, l'utente è tenuto ad adottare opportune misure per eliminare il problema.



VORSICHT: Dies ist ein Produkt der Klasse A. Bei Betrieb in Wohnräumen kann dieses Produkt Störungen im Radio- und Fernsehempfang verursachen. In diesem Fall ist der Benutzer dazu verpflichtet, geeignete Abhilfemaßnahmen zu treffen.



ADVERTENCIA: este es un producto de clase A. En un entorno doméstico este producto podría causar interferencias de radio, por lo que el usuario debe tomar las medidas oportunas.



警告: この装置は、クラスA 情報技術装置です。この装置を家庭環境で使用する
と電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を
講ずるよう要求されることがあります。



警告: 这是 A 类产品。在室内环境中使用本产品可能会产生射频干扰，这种
情况下，用户需要进行一些适当的测量。

United Kingdom Telecommunications Act 1984

The Hewlett-Packard UDO products are approved under Approval Number NS/G/1234/J/100003 for indirect connection to Public Telecommunication Systems within the United Kingdom.

stock Turvallisuusyhteenveto

Laserturvallisuus

LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

Hewlett-Packard optiset levymuistiasemat ovat käyttäjän kannalta turvallisia luokan 1 laserlaitteita. Normaalisissa käytössä levymuistiaseman kotelointi estää lasersäteiden pääsyn laitteen ulkopuolelle.

Laitteen turvallisuusluokka on määritetty standardin EN 60825 mukaisesti.

VAROITUS!

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för laserstrålning, som överskrider gränsen för laserklass 1.

Huolto

Hewlett-Packard levymuistiasemien sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Levymuistiaseman sisälle asennettujen luku-/kirjoitusyksiköiden suojakotelo ei tule avata huoltotoimenpiteiden yhteydessä.

VARO!

Mikäli luku-/kirjoitusyksikön suojakotelo avataan ja suojalukitus ohitetaan, olet alttiina lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

VARNING!

Om skyddshöljet av den optiska drivmodulen öppnas och spärren urkopplas då apparaten är i funktion, utsättas användaren för laserstrålning. Betrakta ej strålen.

Tiedot luku-/kirjoitusyksikössä käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 660 nm

Teho 60 mW

Turvallisuusluokka 3B

English translation of Finland regulatory information

LASER SAFETY SUMMARY

LASER SAFETY

CLASS 1 LASER PRODUCT

Hewlett-Packard jukeboxes are for user safe class 1 laser products. In normal use the enclosure of the optical drives prevents the laser beam from escaping outside of the product.

The jukebox was type approved in Finland for laser safety by the National Board of Labour Protection. The safety class of the products was defined according to the resolution No 472/1985 of the Council of State and the standard EN 60825.



WARNING: The use of the product otherwise than specified in the user's manual may expose the user to laser radiation exceeding safety class 1.



AVERTISSEMENT : l'utilisation de ce produit de façon non conforme à ce qui est indiqué dans le manuel de l'utilisateur peut exposer l'utilisateur à des rayonnements laser dangereux excédant les normes de sécurité établies pour les matériels appartenant à la Classe 1.



AVVERTENZA: Il mancato rispetto delle indicazioni sull'utilizzo del prodotto riportate nel manuale dell'utente, potrebbe esporre l'utente a radiazioni laser superiori alla Classe 1 di sicurezza.



VORSICHT: Bei unsachgemäßer Nutzung des Produkts (nicht gemäß der Ausführungen im Benutzerhandbuch) kann der Benutzer Laserstrahlung ausgesetzt werden, die die Grenzwerte der Laserschutzklasseklasse 1 übersteigt.



ADVERTENCIA: un uso del producto distinto de los especificados en la guía de usuario puede producir una exposición peligrosa del usuario a las radiaciones superando el nivel de seguridad 1.



警告： ユーザーマニュアルの記載内容と異なる製品の使用により、クラス 1 の安全基準を超えるレーザー放射にさらされるおそれがあります。



警告： 如果没有按照用户手册中的规定使用本产品，用户可能会受到超过 1 级安全的激光辐射。

SERVICE

There are no user serviceable parts inside the jukebox. The jukebox products can be serviced only by qualified service personnel. The optical drive mechanism(s) installed inside the library system shall not be opened or disassembled during service.



WARNING: If the enclosure of the optical drive mechanism is opened and the safety interlock disabled, you may be exposed to the laser radiation when the drive is operating. Avoid exposure to the beam.



AVERTISSEMENT : si le boîtier du mécanisme d'entraînement optique s'ouvre et que le verrou de sécurité est désactivé, vous risquerez d'être exposé aux rayons laser lors du fonctionnement de l'unité. Évitez de vous exposer au faisceau.



AVVERTENZA: Se il contenitore del meccanismo dell'unità ottica è aperto e il meccanismo di blocco di sicurezza è disabilitato, è possibile che l'utente sia esposto a radiazioni laser durante il funzionamento dell'unità. Evitare l'esposizione al raggio.



VORSICHT: Wenn das Gehäuse des optischen Laufwerks geöffnet wird und die Sicherheitssperre deaktiviert ist, können Sie bei Betrieb des Laufwerks Laserstrahlung ausgesetzt werden. Vermeiden Sie es, sich dem Laserstrahl auszusetzen.



ADVERTENCIA: si el receptáculo del mecanismo de la unidad óptica se abre y se desactiva el interbloqueo de seguridad, es posible que se exponga a la radiación de láser cuando la unidad esté funcionando. Evite la exposición al rayo.



警告： オプティカルドライブ装置のエンクロージャを開き、安全インターロック機構を解除した場合、ドライブの動作中にレーザー放射にさらされるおそれがあります。ビームに当たらないようにして下さい。



警告： 如果打开了光驱装置，并且安全互锁失去作用，则用户在使用光驱时可能会受到激光辐射。请避免身体的任何部位暴露在激光光束之下。

The information about the radiation characteristics of the laser diode used in the optical drive mechanism:

- Wavelength 680 nm
- Power 60 mW
- Class 3B laser

BSMI Notice

警告使用者：
這是甲類的資訊產品，在居住的
環境中使用時，可能會造成射頻
干擾，在這種情況下，使用者會
被要求採取某些適當的對策。

Japanese Notice

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Laser Device

All HP systems equipped with a laser device comply with safety standards, including International Electrotechnical Commission (IEC) 825. With specific regard to the laser, the equipment complies with laser product performance standards set by government agencies as a Class 1 laser product. The product does not emit hazardous light; the beam is totally enclosed during all modes of customer operation and maintenance.

Laser Safety Warnings



WARNING: To reduce the risk of exposure to hazardous radiation:

- Do not try to open the laser device enclosure. There are no user-serviceable components inside.
 - Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.
 - Allow only HP authorized service technicians to repair the laser device.
-

CDRH Regulations (USA only)

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States. The labels and artwork shown below indicate compliance with CDRH regulations and must be attached to laser products marketed in the United States.



WARNING: Use of controls or adjustments, or performing procedures other than those specified in this manual may result in hazardous laser radiation exposure.

Note: Complies with 21 CFR Chapter 1 Subchapter J.

Laser Class Information: A black on yellow label which reads, “Class 1 Laser Product” printed in English, French, German, Finnish, Japanese, and Spanish.

Compliance with International Regulations

All HP systems equipped with laser devices comply with appropriate safety standards, including IEC825.

Glossary

This glossary defines terms used in this guide or related to this product and is not a comprehensive glossary of computer terms.

cartridge

A plastic enclosure that contains an optical disk. The cartridge is labeled “A” or “B” to denote separate sides of the optical disk. The optical disk is never removed from the cartridge.

driver

A program that allows the operating system to communicate with a peripheral device.

element

A SCSI term for any one of the autochanger components — drive, mailslot, storage slots, or picker.

jukebox

A term synonymous with optical disk library or autochanger. This type of optical storage device is often referred to as a “jukebox” because when a file is requested, the disk containing the file is found, inserted into the drive, and the requested information is sent to the host computer system, similar to the way a musical jukebox finds a record and moves it to the turntable when a song is requested.

jukebox controller

The part of the jukebox that controls the sending and receiving of SCSI commands, and controls the disk transport mechanism.

LAN

Local area network. A group of computers and peripherals physically connected so users can share hardware and software resources.

mailslot

The area where disks are inserted and removed from the jukebox.

multifunction drive

An optical disk drive that supports both rewritable and WORM optical disks. The drive detects the disk type by reading a factory-stamped code on the disk, and automatically determines whether to operate in rewritable or WORM mode.

optical disk

A term synonymous with the 5.25-inch optical disk. There are two types of optical disks: rewritable and WORM.

optical disk library

See jukebox.

rewritable optical

An optical disk technology in which data can be repeatedly written using optical reading and writing technology.

SCSI

An acronym for the Small Computer Systems Interface.

storage slot

An autochanger element that holds cartridges when the cartridges are not in a drive or not being ejected through the mailslot.

terminator

A resistor array device used for electrically terminating a SCSI bus. A SCSI bus must be terminated at its two physical ends. A peripheral device uses a terminator only if it is at the end of the bus.

ultra density optical

UDO (Ultra Density Optical), like HP's DVD+RW, uses Phase Change technology in order to achieve increased data density on a 130mm disk. Phase Change technology uses a laser to read and write from the active layer on the disk. The recording process uses the laser to heat each data bit to a specific temperature. One temperature allows the bit to form a crystalline (reflective) mark and a different temperature allows the bit to form an amorphous (less reflective) mark. Data is read by using a low power laser beam to detect the difference in the levels of reflectivity recorded on the disk.

write-once or WORM

An additional operating mode available with multifunction drives. When a write-once (WORM) disk is inserted, the drive will write data, but will not write over data that has been previously written. This feature is useful for applications that need permanent data security and audit trails.

write-protect

A feature that prevents data from being written to a disk. A write-protect tab is located on both sides of the optical disk cartridge to enable write-protection on one or both surfaces of the disk.

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